## REMARKS/ARGUMENTS

### A. THE PRIOR ART REJECTIONS

Claims 1- 5, 14 – 17, 21, 34, 35, 43, 44, 52 and 53 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,585,951 to Noda et al in view of U.S. Patent 5,477,360 to Sunohara et al in view of U.S. Patent 4,877,718. Claims 1-5, 12-17, 21, 23, 24, 34, 35, 37-39, 43, 44, 46-48, 52, 53 and 55-57 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,585,951 to Noda et al and of U.S. Patent 4,460,667 to Landa et al in view of U.S. Patent 5,331,344 to Miyagawa et al. Claims 6-11, 18-20 and 22 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,585,951 to Noda et al and U.S. Patent 4,460,667 to Landa et al and of U.S. Patent 5,331,344 to Miyagawa et al in view U.S. Patent 5,128,788 to Takatoh et al. Claims 40, 41, 49, 50, 58 and 59 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,585,951 to Noda et al and U.S. Patent 4,460,667 to Landa et al and of U.S. Patent 5,331,344 to Miyagawa et al in view U.S. Patent 5,051,800 to Shoji et al. Claims 36, 45, 54 and 60 stand rejected again stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,585,951 to Noda et al in view of U.S. Patent 4,460,667 to Landa et al and of U.S. Patent 5,331,344 to Miyagawa et al in view of U.S. Patent 5,359,441 to Mori et al. Claims 42 and 51 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 5,585,951 to Noda et al and of U.S. Patent 4,460,667 to Landa et al and of U.S. Patent 5,331,344 to Miyagawa et al in view of U.S. Patent 5,229,644 to Wakai et al. All prior art rejections are respectfully traversed for at least the following reasons.

## B. THE NODA/LANDA/MIYAGAWA COMBINATION

The Office Action properly concedes that Noda does not disclose, e.g., that its planarization film (e.g., Noda film 1784) has a dielectric constant of 3.4 to 3.8[1]. *See,* the first full paragraph on page 5 of the Final Office Action. Yet the Final Office Action incorrectly contends that U.S. Patent 4,460,667 to Landa allegedly proves the "scientific fact" that "the acrylic resin used to make the insulator in Noda et al has a dielectric constant property of 3.0 – 3.5". *See,* the second full paragraph *et seq* on page 5 of the Final Office Action.

As Applicants have pointed out previously, the precise wording of Landa is that "The dielectric constant of an acrylic resin, such as methyl methacrylate, lies between 3.0 and 3.5" (underlined emphasis added). Significantly, by this quote Landa does not teach that *all* acrylic resins have a dielectric constant between 3.0 and 3.5. Landa's disclosure fails to confirm that Noda's acrylic resin necessarily has a dielectric constant between 3.0 and 3.5.

Landa fails to demonstrate that the transparent interlayer organic insulating film of Noda *inherently* has a dielectric constant property of 3.0 – 3.5. Contrary to the Examiner's reliance on Landa, Applicants have provided evidence that acrylic resins may possess a range of dielectric constants outside of the claimed 3.0 – 3.5 range. The fact that acrylic resins may have a range of dielectric constants outside of the claimed 3.0 – 3.5 range demonstrates that Noda fails to establish a *prima facie* case of obviousness.

The Federal Circuit has explained in *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993), for example, the following with regard to inherency and obviousness:

---

[1] The office action also concedes that Noda et al does not disclose a spectral transmittance of the transparent interlayer organic insulating film has a lower transmittance for blue light than that for green and red light. See, e.g., June 9, 2009 office action, page 4, first full paragraph.

> The mere fact that a certain thing may result from a given set of circumstances is not sufficient [to establish inherency.]" In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981) (citations omitted) (emphasis added). "That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown." In re Spormann, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966). Such a retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection. See In re Newell, 891 F.2d 899, 901, 13 USPQ2d 1248, 1250 (Fed.Cir. 1989).

The fact that Noda may teach an acrylic resin with the required dielectric constant is not sufficient to establish a prima facie case of obviousness as the Examiner has failed to establish that all acrylic resins of Noda necessarily meet the requirements of the claims. To the contrary, Applicants have previously submitted evidence that Noda's acrylic resin may not necessarily have a dielectric constant between 3.0 and 3.5. Specifically, Applicants have cited US Patent 5,076,963 to Kameyama et al which describes certain acrylic resins as having a dielectric constant of values of 10 or greater[2]. Note particularly col. 4, lines 18 of US Patent 5,076,963 to Kameyama which lists numerous acrylic compounds and which further states that such compounds have "a high dielectric constant of not less than 10". *See*, also, col. 7, lines 3 - 5, col. 8, Example 1, and col. 10, example 8. Kameyama Example 1 describes an insulator layer of acrylate with a dielectric constant of 30. Unlike Landa (whose entirely different field of endeavor is described below), the acrylic resins exemplified by US Patent 5,076,963 to Kameyama are used in insulator layers for visible display devices.

Thus, it is not inevitable that Noda's planarization film 1784 is in any particular dielectric constant range as is required by the claims, and the rejection under 35 USC §103(a) must fail under *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

---

[2] See, the Request For Reconsideration filed April 17, 2009, paragraph bridging pages 2 and 3.

Noda's teaching regarding planarization layers (11 and 1784) using acrylic resin is quite brief. For example, Noda only states that the planarization layers 11, 1784 are suitably selected from the specified organic materials and inorganic materials. As to the organic materials, for example, an acrylic resin or a polyimide resin may be used. Noda's disclosure does not appear to include any significant discussion or concern regarding the dielectric constant associated with the material. Accordingly, it is unreasonable to equate the planarization layers 11, 1784 of Noda – which are only possibly made of acrylic resin – with the claimed insulating layer having a specific dielectric range. Moreover, as shown above, the entire record including Landa fails to establish a basis for concluding that it is inevitable that the Noda insulating layer inherently have the claimed dielectric range.

Nor is there basis or motivation to modify Noda to include Landa's supposed dielectric constant. The final office action of June 9, 2009 alleges (at the bottom of page 4) that motivation arises from the desire to produce a reliable photosensitive insulating film on top of the TFT to embed the irregularities on the surface of the device bus lines. But embedding of irregularities and reliability can be accomplished in ways not germane to dielectric constant. Moreover, as indicated above, Noda's disclosure does not appear to include any significant discussion or concern regarding the dielectric constant associated with the material.

Significantly, Landa's field of endeavor is remote from and unrelated to that of Noda. Landa discloses a "method for developing latent electrostatic images for gap transfer to a carrier sheet" (*see*, e.g., the Landa title). Landa's field of endeavor is confined to developing electrostatic images, e.g., formation of images using toner particles as occurs in photocopying technology. The differences and disparities between photocopying and liquid crystal display are legion. For example, Landa's image is formed on a carrier sheet, not a semiconductor-based display element. Landa's image, once formed, remains fixed, whereas images provided on a LCD are changeable. Landa's charged toner particles have entirely different composition and behavior as compared to liquid crystals.

Moreover, Landa's acrylic resin (col. 3, lines 47 – 50) is used for spacer particles in a carrier liquid (col. 3, lines 24 *et seq*) and serves to act as "gap-forming means to prevent the freshly developed image from contacting the carrier sheet…" (col. 3, lines 37 *et seq*). Teachings of acrylic resin spacer particles dispersed in a liquid carrier would not be considered by the person skilled in the liquid crystal display art when contemplating formation of a solid insulating planarization layer.

One example of acrylic resin cited by Landa is methyl methacrylate (col. 3, lines 48 – 50). Landa is silent as to whether or not methyl methacrylate is photosensitive, and certainly does not require that its spacer particles be photosensitive (since [instead of photosensitivity] electromagnetic phenomena are involved in Landa's toner development).

The photocopy art of Landa is thus vastly different from Noda's field of liquid crystal display technology. The person skilled in the art would not turn to Landa's photocopying disclosure for a teaching to use in or combine with Noda.

Appellants therefore submit that the record does not provide a basis to conclude that it is an established scientific fact that the acrylic resin used in Noda necessarily has a dielectric constant property of 3.0 – 3.5. Thus, it cannot be inferred from Landa that Noda's planarization film (e.g., film 1784) is in any particular dielectric constant range.

U.S. Patent 5,331,344 to Miyagawa

The April 30, 2010 office action appears to concede that "it is not clear from Landa that the metha methacrylate is photosensitive". Apparently for that reason the office action further cites U.S. Patent 5,331,344 to Miyagawa et al which supposedly discloses "the photosensitive material is composed of methyl methacrylate (col. 34, lines 50 – 52)". Office action at page 5, third full paragraph.

The fact that a photosensitive material is composed of a specific substance such as methyl methacrylate does not conclusively prove that such substance (e.g., methyl

methacrylate) itself is photosensitive. In other words, there is no precise indication that the photosensitivity of the photosensitive material is directly attributable to the inclusion of methyl methacrylate, or that methyl methacrylate by itself is sufficient to render any material which it is combined as photosensitive. Thus, regardless of whether Landa's metha methacrylate is photosensitive or not, the addition of U.S. Patent 5,331,344 to Miyagawa does not undercut Applicants' argument (as set forth on pages 3 – 6 of the February 4, 2010 Request For Reconsideration) that "the record does not provide a basis to conclude that it is an established scientific fact that the acrylic resin used in Noda necessarily has a dielectric constant property of 3.0 – 3.5."

Regarding the alleged Noda/Landa/Miyagawa combination, Noda does not mention metha methacrylate as its acrylic resin, therefore the assertion of the office action that Noda has the claimed dielectric constant is not justified. Moreover, the fact that a photosensitive material is composed of metha methacrylate does not conclusively prove that metha methacrylate itself is photosensitive.

**C. THE NODA/SUNOHARA/MOORE COMBINATION**

The resins disclosed in each of references Landa/Miyagawa/Sunohara/Moore are entirely different from the interlayer insulating film of Noda, and can not be adapted to the materials to be combined for specifying the dielectric constant of the interlayer insulating film disclosed in Noda.

Regarding the alleged Noda/Sunohara/Moore combination, the mere disclosure of a polyimide having a dielectric constant value of 3.5 in Sunohara can not justify that Node's acrylic resin insulating layer has the claimed dielectric constant, especially when Sunohara explicitly teaches away from this dielectric constant value of 3.5.

Applicants again list the following reasons why Sunohara does not teach or suggest claimed features:

1) Sunohara does not provide any evidence establishing a relationship between different dielectric constants of various polyimides and their photosensitivity;
2) Sunohara is directed to an entirely different purpose (selecting suitable masking materials and alignment film materials); and
3) for this different purpose, Sunohara actually explicitly teaches away from the claimed dielectric range.

Sunohara uses various polyimides as an alignment film material, and for such use specifically teaches away Applicants' claimed dielectric range. In this regard Sunohara clearly states that a polyimide having a relative dielectric constant of 3.5 does not appear to be a favorable choice. Meanwhile, "a polyimide having a larger relative dielectric constant is less susceptible to the influence of the solvent" (column 11, lines 1-3 of Sunohara), and "in practical viewpoint, when a polyimide having a relative dielectric constant of 4 to 7, preferably 4.5 to 6.5 reflecting the structure of polyimide is used, it is possible to perform a treatment of picture element partition alignment by repeating several times the rubbing treatment to the same alignment film by using **a** mask without causing the degradation alignment" (column 11, lines 17-23 of Sunohara).

In order to clearly teach away using a polyimide having a dielectric constant of 3.5, Sunohara goes as far as using a comparative example to explain. In particular, Comparative Example 9 shows that polyimide having a relative dielectric constant of 3.5 appears to lead to a defective display (See Comparative Example 9, see especially, column 37, lines 59-67 of Sunohara).

Applicants urge that Sunohara not be employed in order to compensate for the deficiency of the Wakai/Shimada/Noda combination in failing to disclose the polyimide having the claimed dielectric constant range. To modify the Wakai/Shimada/Noda combination so as to use a specific dielectric constant of a polylinide based on the

disclosure of Sunohara, one skilled in the art would not ignore the purpose nor the selection criterion discussed in Sunohara, and would definitely not ignore the explicit teaching away in Sunohara as explained above. The mere inclusion of a specifically mentioned dielectric constant value of 3.5 does not support a prima facie case of obviousness, especially when Sunohara explicitly teaches away from the claimed range.

It should be noted that,

> According to MPEP 52141.03, PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH **AWAY** FROM THE CLAIKS, A prior art reference must be considered in its entirety, i.e.., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. V. Garlock, Inc.,* 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).
>
> According to MPEP S2145(X)(D)(2), References Cannot Be Combine8 Where Reference Teaches **Away from** Their Combination. It is improper to combine references where the references teach away from their combination. *In re Grasse.UI,* 713 F.2d 731, 743, 218 USPO 769, 779 (Fed. Cir. 1983).

It is well established that it is impermissible to pick and choose only so much as will support a given position to the exclusion of other parts necessary to the full appreciation of what a reference fairly teaches or suggests. Bausch & Lomb, *Inc. v. Barnes-Hind/Hydrocurve,* 230 U.S.P.Q. 416, 419 (Fed. Cir. 1986) *(citing In re Wesslau*, 147 U.S.P.Q. 391, 393 (CCPA 1965)). See also, *In* re *Fritch*, 23 U.S.P.Q.2d 1780, 1783-84 (Fed. Cir. 1992) (One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.); In re *Mercier,* 185 U.S.P.Q. 774, 778 (CCPA 1975) *(all* the relevant teaching of the cited reference must be considered in determining what they fairly teach to one having ordinary skill in the

art) (emphasis original); *In re Wesslau* 353 F..2d 238, 241 (CCPA 1965) (impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what Buch reference fairly suggests to one skilled in the art.)

Applicants also contend that it would be incorrect to conclude that polyimide made from tetracarboxylic acid dianhydride used in Sunohara is "inherently photosensitive" on the basis of Moore. Importantly, Moore teaches both a polyimide made from CBDA that is inherently photosensitive and a polyimide made from CBDA that is not photosensitive. With such photosensitive ambivalence Moore fails to definitively show that polyimide made from tetracarboxylic acid dianhydride in Sunohara is necessarily photosensitive.

Moore disclosing a photosensitive polyimide made from tetracarboxylic acid dianhydride does not conclusively prove that any polyimide made from tetracarboxylic acid dianhydride is "inherently photosensitive". In this regard, see again the above-quoted passage from *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

For reasons including the foregoing Applicants request that all prior art rejections be withdrawn.

**D. MISCELLANEOUS**

In view of the foregoing, it is respectfully requested that all prior art rejections be withdrawn and the application be passed to issue.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: /H. Warren Burnam, Jr./

H. Warren Burnam, Jr.
Reg. No. 29,366

HWB:lsh
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100